UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,018	06/18/2001	Claire-Sabine Randriamasy	Q64966	8810

23373 7590 03/28/2007

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
DANIEL JR, WILLIE J	
ART UNIT	**PAPER NUMBER**
2617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/882,018	RANDRIAMASY, CLAIRE-SABINE	
	Examiner	Art Unit	
	Willie J. Daniel, Jr.	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to applicant's amendment filed on 12 January 2007. **Claims 1** and **3-10** are now pending in the present application and **claim 2** is cancelled. This office action is made **Non-Final**.

Specification

2. The disclosure is objected to because of the following informalities:

   a. Specification recites "...server **BSM**..." on pg. 4, line(s) 27-28 without spelling out the abbreviation in words.

   Appropriate correction is required.

3. This list of examples is not intended to be exhaustive.

Claim Objections

4. **Claims 1, 7, and 10** are objected to because of the following informalities:

   a. **Claims 1, 7, and 10** include the limitation "...probability (α_1, α_2)..." as recited in line(s) 9 of claim 1. The Examiner interprets as --probability (a_1, a_2)-- as recited in the specification on pg. 7, lines 26 and 31 and suggests replacing said limitation to help clarify the claim language.

   Appropriate correction is required.

5. This list of examples is not intended to be exhaustive.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5 and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

a. **Claim 5** recites the limitation "...areas ($\mathbf{A_k}$)..." in line(s) 2 of the claim. The variable in parentheses is not present in the instant application as representing area.

b. **Claim 7** recites the limitation "...dividing module... first determining module... second determining module...outputting module..." in line(s) 3-8 of the claim. Regarding applicant's argument on pg. 8, 1st paragraph, "...has to be carried out by a software module or...software and hardware module...", the Examiner respectfully disagrees. Applicant recites "...pg. 5, lines 1-6... pg. 5, lines 7-11...Fig. 2...pg. 5, lines 12-34..." as support, but the cited area at best basically speaks of a method used by a planning tool. Furthermore, there is no distinguishing between modules being a dividing, first determining, or second determining. Therefore, in view of the above, the 112 rejection is hereby maintained.

Regarding **claims 5 and 7**, the claims include a limitation that is not supported by the instant application as originally filed. The Examiner respectfully requests the applicant to

provide page(s), line(s), and figure(s) of the instant application that supports the limitation of the claim(s) and/or any supportive comment(s) to help clarify and resolve this issue(s).

7. This list of examples is not intended to be exhaustive. The Examiner respectfully requests the applicant to review all claims and clarify the issues as listed above as well as any other issue(s) that are not listed.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3-10 are rejected under 35 U.S.C. 102(e) as being anticipated by **Vasudevan et al.** (hereinafter Vasudevan) (**US 6,539,221 B1**).

Regarding **claim 1**, Vasudevan discloses a method of constructing a representation (Figs. 1, 5, and 17) of the geographical distribution of traffic for a cellular radio network (see abstract; col. 1, line 64 - col. 2, line 5; col. 2, lines 14-42), the method comprising the steps of:

dividing each cell of said cellular network into a set of sectors which reads on the claimed "areas" using information on handovers obtained from said cellular network (see col. 1, line 64 - col. 2, line 5; col. 5, lines 1-12; Figs. 5, 6, 7, 8, and 20), where the cell is divided into areas for handover of traffic;

determining a traffic threshold which reads on the claimed "value" for each of said areas (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 9-19; Figs. 3, 22b, 22f, and 22h), where a threshold is calculated for each cell area; and

determining a representation of the geographical distribution of the traffic from said traffic values (see col. 3, lines 47-64; col. 8, line 44 - col. 9, line 17; Figs. 5, 8, 11, 13, and 17), where the cell is split according to traffic threshold; and

outputting the determined representation (Figs. 1 and 24), where the system has a traffic map which maps traffic of an area,

wherein the traffic value of an area depends on an outgoing handover probability (α_1, α_2) from said are to a neighboring cell (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 10-19; Fig. 22b).

Regarding **claim 3**, Vasudevan discloses a method according to claim 2, wherein said handover probabilities are computed conjointly with said traffic values by a constraint optimization method (see col. 1, lines 41-49; col. 5, line 39 - col. 8 line 43; col. 13, lines 10-19; Figs. 18 and 22b), where the network optimization is performed within the constraints of the algorithms.

Regarding **claim 4**, Vasudevan discloses a method according to claim 1, wherein the step of dividing each cell is made up of the following substeps:

acquiring incoming handover boundaries from best server maps provided by a management system (see col. 3, lines 6-64; col. 4, lines 32 - col. 5, line 35; Figs. 16, 17, and 23a-c), where the system determines the handover boundaries which are adjusted according to traffic demands, and

computing outgoing handover boundaries from said incoming handover boundaries (see col. 3, lines 6-64; col. 4, lines 32 - col. 5, line 35; Figs. 16, 17, and 23a-c), where determining of the outgoing boundaries are generated from the incoming boundary would be inherent for handover as one of ordinary skill in the art would clearly recognize,

said outgoing handover boundaries forming the boundaries of said areas (see col. 3, lines 6-64; col. 4, lines 32 - col. 5, line 35; Figs. 16, 17, and 23a-c), where determining of the outgoing boundaries are generated from the incoming boundary for handover.

Regarding **claim 5**, Vasudevan discloses a method according to claim 1, wherein the following constraint is satisfied for each cell: addition of all the traffic values (λ_k) of the areas (A_k) comprised in a cell (i) is equal to the traffic value of the cell (i) (see col. 5, lines 1-12; col. 8, lines 13-19; col. 9, line 33 - col. 10, line 14; col. 13, lines 9-19; Fig. 22b-h), where the cell/sectors have a power limit and traffic threshold that the densification program use for the algorithm and Erlang and Poisson formulas to optimize the network.

Regarding **claim 7**, Vasudevan discloses a computer planning device for constructing a representation (Figs. 1, 5, and 17) of the geographical distribution of traffic for a cellular radio network (see abstract; col. 1, line 64 - col. 2, line 5; col. 2, lines 14-42), the device comprising:

a dividing module dividing each cell of said cellular network into a set of sectors which reads on the claimed "areas" using information on handovers obtained from said cellular network (see col. 1, line 64 - col. 2, line 5; col. 5, lines 1-12; Figs. 5, 6, 7, 8, and 20), where the cell is divided into areas for handover of traffic;

a first determining module determining a traffic threshold which reads on the claimed "value" for each of said areas (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 9-19; Figs. 3, 22b, 22f, and 22h), where a threshold is calculated for each cell area; and

a second determining module determining a representation of the geographical distribution of the traffic from said traffic values (see col. 3, lines 47-64; col. 8, line 44 - col. 9, line 17; Figs. 5, 8, 11, 13, and 17), where the cell is split according to traffic threshold; and

an outputting module outputting the determined representation to a management unit (Figs. 1 and 24), where the system has a traffic map which maps traffic of an area,

wherein the traffic value of an area depends on an outgoing handover probability (α_1, α_2) from said are to a neighboring cell (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 10-19; Fig. 22b).

Regarding **claim 8**, Vasudevan discloses the method according to claim 1, wherein said outputting comprises outputting the determined representation to a management unit to generate an alarm or to take corrective measures when needed (see col. 9, lines 18-20), where the system recognizing the traffic conditions for an area to provide cell splitting in which the alarm would be inherent as one of ordinary skill in the art would clearly recognize.

Regarding **claim 9**, Vasudevan discloses the computer planning device according to claim 7, wherein said outputting module outputs the determined representation to a management unit to generate an alarm or to take corrective measures when needed (see col. 9, lines 18-20), where the system recognizing the traffic conditions for an area to provide cell splitting in which the alarm would be inherent as one of ordinary skill in the art would clearly recognize.

Regarding **claim 10**, Vasudevan discloses a mobile telecommunications network split into a plurality of cells (see col. 1, line 64 - col. 2, line 5; col. 2, lines 14-42; col. 9, lines 18-20), the network comprising:

a plurality of base stations, wherein each of the base stations are allocated to a respective cell within the plurality of cells (see col. 7, lines 38-40; Figs. 23a-c);

a management unit for managing the network (see Fig. 1);

a planning tool for constructing a representation of the geographical distribution of traffic for a cellular radio network (see Fig. 1),

wherein the planning tool divides each cell of said cellular network into a set of areas using information on handovers boundaries obtained from said cellular network, determines a traffic value for each of said areas, and determines a representation of the geographical distribution of the traffic from said traffic values (see col. 1, line 64 - col. 2, line 5; col. 5, lines 1-12; col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 9-19; Figs. 5, 6, 7, 8, and 20; claim 1); and

a storage unit storing the determined representation for determining whether corrective measures are needed with respect to allocation of the plurality of base stations to respective cells, wherein the traffic value of an area depends on an outgoing handover probability (α_1, α_2) from said area to a neighboring cell (see col. 8, lines 14-19,44-64; col. 11, lines 4-11; col. 13, lines 10-19; Fig. 22b).

Response to Arguments

9. Applicant's arguments with respect to claims 1 and 3-10 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amended language, new limitations, and/or new claims.

In response to applicant's arguments, the Examiner respectfully disagrees as the applied reference(s) provide more than adequate support and to further clarify (see the above claims for relevant citations and comments in this section).

10. The Examiner requests applicant to provide support for any further amended claim language.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Bodin et al. (US 5,241,685) discloses load sharing control for a mobile cellular radio system.

b. Hakalin et al. (US 6,584,318 B2) discloses method for dividing traffic in a cellular radio network.

c. Clancy (US 6,580,911 B1) discloses clutter database enhancement methodology.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Willie J. Daniel, Jr. whose telephone number is (571) 272-7907. The examiner can normally be reached on 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WJD,JR/

WJD,JR
22 March 2007

CHARLES N. APPIAH
SUPERVISORY PATENT EXAMINER